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EXAMINER

KIM, DAVID S

ART UNIT	PAPER NUMBER
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2633

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/462,337

Applicant(s)

ZEFFLER ET AL.

Examiner

David S. Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-23 and 27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-23 and 27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 19 (09 August 04).
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. **Claims 18** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. There appears to be conflicts between the invention claimed and the invention disclosed.

Regarding claim 18, the term "brief" in claim 18 is a relative term which renders the claim indefinite. The term "brief" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. In particular, the term "brief" renders the length of "intervals" indefinite in line 4.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claim 14-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Widmer et al. (U.S. Patent No. 4,151,373) in view of Nakamura et al. (U.S. Patent No. 5,144,466).

Regarding claim 14, Widmer et al. discloses:

A method for transmitting signaling and control information (Widmer et al., col. 1, lines 12-24) for a network that performs an information transfer in a digitized form, comprising the steps of:

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performing one of a generation (Widmer et al., col. 7, lines 6-10) and an analysis (Widmer et al., col. 1, lines 15-20) of the signaling and control information in one of a network terminator and in a further network element (Widmer et al., another network terminator, not shown);

performing one of the steps of:

feeding (Widmer et al., col. 3, lines 18-21) the signaling and control information into the network, and

removing (Widmer et al., col. 3, lines 42-44) the signaling and control information from the network;

using a time-division multiplex operation (Widmer et al., Figs. 1-3a) to transmit the signaling and control information via the same components (Widmer et al., Fig. 4) of the network as those used to transmit the useful information, wherein the signaling and control information is capable of being modulated independently (Widmer et al., col. 1, lines 12-15; note separate “data source” and “extra information source” in Fig. 4) of the useful information.

Widmer et al. does not expressly disclose the following (but Nakamura et al. does):

said network being a wavelength-division multiplex network (Nakamura et al., Figs. 5 and 9) that performs optical, fiber-bound information transfer;

the step of using a terminal (Nakamura et al., communication interfaces 71-74 in Fig. 5) to process useful information according to one of an optical encoding and an optical decoding (Nakamura et al., encoder-decoders 82, 87, 91 in Figs. 6A-6D);

the step of performing one of the steps of:

feeding at a network terminator (Nakamura et al., communication interfaces 71-74 in Fig. 5) the useful information into the wavelength-division multiplex network as an

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optical signal having a defined fundamental wavelength (Nakamura et al., wavelengths λ_1 - λ_4 in Figs. 6A-6D) and

removing at the network terminator the useful information from the wavelength-division multiplex network as the optical signal having the defined fundamental wavelength; and

the step of transmitting (Nakamura et al., Figs. 6B-6D) collectively a plurality of signals having different wavelengths in an optical fiber.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to implement the signaling and control information transmitting method of Widmer et al. in the network of Nakamura et al. One of ordinary skill in the art would have been motivated to do this to provide the large capacity and high-speed transmission (Nakamura et al., col. 1, lines 23-36) benefits of a WDM/TDM network.

Regarding claim 15, Widmer et al. in view of Nakamura et al. discloses:

The method according to claim 14, wherein the signaling and control information includes a characteristic signal sequence (Widmer et al., col. 6, lines 50-55; col. 9, lines 1-6) by which the signaling and control information is capable of being identified in a signal stream of the useful information such that corresponding transmitters and receivers of the signaling and control information are synchronized.

Regarding claim 16, Widmer et al. in view of Nakamura et al. discloses:

The method according to claim 14, further comprising the step of:

Transmitting the signaling and control information at regular time intervals T (Widmer et al., Fig. 3a, col. 4, lines 34-49) for a predetermined duration of T_{OH} (Widmer et al., m bits in Fig. 3a).

Regarding claim 17, Widmer et al. in view of Nakamura et al. discloses:

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The method according to claim 16, wherein each regular time interval T is a multiple of a characteristic clock pulse duration of the useful information (Widmer et al., col. 9, lines 44-57).

Regarding claim 18, Widmer et al. in view of Nakamura et al. discloses:

The method according to claim 16, wherein:

A synchronization between a transmitter and a receiver of the signaling and control information is accomplished by a characteristic signal being transmitted at brief intervals (Widmer et al., col. 6, lines 50-55; col. 9, lines 1-6).

Widmer et al. in view of Nakamura et al. does not expressly disclose:

following the synchronization, the characteristic signal being transmitted at variable duration time intervals that gradually increase up to a duration of the regular time intervals T.

However, this step would have been obvious to one of ordinary skill in the art. This step can be used for incrementally training a synchronized transmitter and a synchronized receiver to operate synchronously from an initial synchronization stage that uses brief interval transmissions to a steady-state operation stage that uses regular time intervals T. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to include this step in the method of Widmer et al. in view of Nakamura et al. One of ordinary skill in the art would have been motivated to do this in order to transition smoothly from an initial synchronization stage to a steady-state operation stage without losing synchronous operation.

5. **Claims 19-23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Widmer et al. in view of Nakamura et al. as applied to claim 16 above, and further in view of Bingham et al. (U.S. Patent No. 5,644,573).

Regarding claim 19, Widmer et al. in view of Nakamura et al. discloses all the limitations of claim 19 except for the time interval δ . Bingham et al. discloses such a time interval (Bingham et al., time intervals S1, S2, and S3 in Fig. 3). At the time the invention was

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made, it would have been obvious to a person of ordinary skill in the art to incorporate the time interval of Bingham et al. in the signal and control information transmission of Widmer et al. One of ordinary skill in the art would have been motivated to do this to provide the benefits of “a variety of control type functions such as synchronization of new remote units, transmission channel quality checking and handling data transfer requests” (Bingham et al., abstract).

Regarding claim 20, Widmer et al. in view of Nakamura et al., further in view of Bingham et al. discloses:

The method according to claim 19, further comprising the steps of:
during the interruption lasting for the duration of $T_{OH} + 2\delta$ resulting from the transmission of the signaling and control information, buffering (Widmer et al., Fig. 3b, col. 4, lines 50-54) the useful information in a transmitting terminal equipment (Widmer et al., Fig 4);
and

during an intervening interval with a duration of $T - (T_{OH} + 2\delta)$, transmitting the useful information at such an increased bit rate that an average bit rate corresponds to an uninterrupted useful information transfer (Widmer et al., col. 2, lines 29-52).

Regarding claim 21, Widmer et al. in view of Nakamura et al., further in view of Bingham et al. discloses:

The method according to claim 20, wherein the transmitting terminal equipment includes shift registers (Widmer et al., col. 7, lines 22-29).

Regarding claim 22, Widmer et al. in view of Nakamura et al., further in view of Bingham et al. discloses:

The method according to claim 20, further comprising the steps of:
causing the transmitting terminal equipment to reserve time gaps of the duration $T_{OH} + 2\delta$ in the useful information; and

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causing the transmitting terminal equipment to signal a temporal position (Widmer et al., col. 4, lines 60-62) of the reserved time gaps via the network terminator to a network element (Widmer et al., col. 4, lines 61-62) transmitting the signaling and control information.

Regarding claim 23, Widmer et al. in view of Nakamura et al., further in view of Bingham et al. discloses:

The method according to claim 20, further comprising the steps of:

causing the network terminator to inform the transmitting terminal equipment of when (Widmer et al., col. 4, line 56 – col. 7, line 39) a time gap having the duration of $T_{OH} + 2\delta$ in the useful information is to be reserved for the transmission of the signaling and control information; and

causing the network terminator to inform the transmitting terminal equipment of when (Widmer et al., col. 6, lines 39-49) the useful information is to be buffered.

6. **Claim 27** is rejected under 35 U.S.C. 103(a) as being unpatentable over Widmer et al. in view of Nakamura et al., further in view of Bingham et al., as applied to claim 20 above, and further in view of Choquet (U.S. Patent No. 4,330,858).

Widmer et al. in view of Nakamura et al., further in view of Bingham et al., discloses:

causing the network terminator to communicate (Widmer et al., col. 4, lines 60-62) the signaling and control information to the transmitting terminal;

causing the transmitting terminal to optically encode (Nakamura et al., encoder-decoders 82, 87, 91 in Figs. 6A-6D) the signaling and control information and transmit the signaling and control information via the wavelength-division multiplex network; and

causing a receiving terminal provided with the encoded useful information to:

decode (Nakamura et al., encoder-decoders 82, 87, 91 in Figs. 6A-6D) the signaling and control information, and

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filter out (Widmer et al., col. 3, lines 42-44) the signaling and control information from the useful information.

Widmer et al. in view of Nakamura et al., further in view of Bingham et al., does not expressly disclose:

causing a receiving terminal provided with the encoded useful information to communicate the signaling and control information to an upstream receiver-end network terminator.

Choquet teaches causing such a receiving terminal (Choquet, Fig. 5) to communicate signaling and control information to supervisory equipment (Choquet, col. 2, lines 25-33). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of Choquet by communicating the signaling and control information to an upstream receiver-end network terminator in the method of Widmer et al. in view of Nakamura et al., further in view of Bingham et al. One of ordinary skill in the art would have been motivated to do this so since "it has been found costly and otherwise undesirable to provide special modems or special separate communication channels for handling supervisory messages. It is preferable that supervisory messages be communicated by facilities which are no more expensive and require no greater frequency bandwidth than the facilities that otherwise would be needed to handle normal message traffic in the complete absence of any supervisory messages" (Choquet, col. 1, lines 27-35). The supervisory messages of Choquet correspond to the signaling and control information of Widmer et al. in view of Nakamura et al., further in view of Bingham et al. The final end receiver of the useful information signal would have no use for signaling and control information related to the network; conversely, other components, such as network terminators, depend on such signaling and control information for proper operation.

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Response to Arguments

7. Applicant's arguments filed on 03 May 2004 (Paper No. 15) have been fully considered but they are not persuasive. The Office has already presented a response to these same arguments in an Advisory Action (Paper No. 17, mailed on 01 June 2004). The present status of the case is that of a Request for Continued Examination (RCE) under 37 C.F.R. 1.114. However, the claims have not been amended since Applicant's last response (Paper No. 15, filed on 03 May 2004). Additionally, no further arguments have been introduced since that last response (Paper No. 15, filed on 03 May 2004), as well. Accordingly, the Office addresses this present RCE with (a) the same standing rejections (see rejections above) from the previous rejections (Paper No. 13, mailed on 31 October 2003) and (b) the same standing response previously presented in said Advisory Action (Paper No. 17, mailed on 01 June 2004). The text of said same standing response follows below:

35 U.S.C. 103

Applicant's arguments filed on 03 May 2004 regarding the rejections under 35 U.S.C. 103 have been fully considered but are not persuasive. Applicant presents two points.

Regarding the first point, Applicant states,

"the Office Action suggests that the implementation of the signaling and control information would have been obvious to a person of ordinary skill in the art. Applicant respectfully disagree and request evidence of such" (Paper No. 15, p. 8, 1st paragraph).

Examiner respectfully points to Widmer et al. to show the implementation of signaling and control information (Widmer et al., col. 1, lines 15-20). Thus, Applicant's first point is not persuasive.

Regarding the second point, Applicant refers to a Federal Circuit case to argue that there is no "specific understanding or principle within the knowledge of a skilled artisan" that

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would motivate a person having no knowledge of the claimed subject matter to "make the combination [of Widmer et al. and Nakamura et al.] in the manner claimed" (Paper No. 15, p. 8).

Examiner respectfully notes that Widmer et al. teaches that, for multiple reasons, it is often required to transmit signaling and control information in digital transmission systems in which telephone and/or data channels are bunched and transmitted over links and/or cable (Widmer et al., col. 1, lines 9-24). Widmer et al. then proceeds to disclose an advantageous method for transmitting signaling and control information in digital transmission systems (Widmer et al., col.1, lines 25-46). Nakamura et al. also teaches digital transmission systems in which telephone and/or data channels are bunched and transmitted over optical fiber links and/or cables (Nakamura et al., multiplexers in Figures, col. 1, lines 14-43, col. 15, lines 41-55). The systems of Nakamura et al. also employ the transmission of signaling and control information (Nakamura et al., note control microprocessor units MPU 85 throughout the Figures and corresponding description in the specification). Accordingly, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to implement the advantageous method of Widmer et al. for transmitting signaling and control information in the networks/systems of Nakamura et al. From the perspective of Widmer et al., one of ordinary skill in the art would have been motivated to combine Widmer et al. and Nakamura et al. since larger capacity and higher speed transmissions are gained through the WDM/TDM optical fiber networks of Nakamura et al. (Nakamura et al., abstract, col. 1, lines 23-36). From the perspective of Nakamura et al., one of ordinary skill in the art would have been motivated to combine Widmer et al. and Nakamura et al. since it is possible to transmit signaling and control information without intervening in or modifying existing facilities, nor altering the structure of original useful information, through the method of Widmer et al. (Widmer et al., col. 1, lines 20-28). In view of this case of obviousness, Examiner considers it

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difficult to consider Applicant's point to be convincing. Thus, Applicant's second point is not persuasive.

Summarily, Applicant's arguments are not persuasive. Thus, Examiner respectfully maintains the standing rejections.

35 U.S.C. 112

Applicant's argument filed on 03 May 2004 regarding the rejection of claim 18 under 35 U.S.C. 112 has been fully considered but is not persuasive. Applicant points to portions of the specification as support (Applicant's specification, p. 5). After review of this portion of the specification, Examiner respectfully notes that the specification appears to simply recite the same language used in the claims. That is, the specification provides no further definition of the degree of "shortness" of the "short intervals" in claim 18. Applicant suggests replacement of the term "short" with the term "brief" so that the claim language recites "brief intervals" (Paper No. 15, p. 3, claim 18, p. 7, 1st paragraph). However, "brief" is also a relative term which renders the claim indefinite. Thus, Applicant's argument is not persuasive. Accordingly, Examiner respectfully maintains the standing rejection.

Additionally, Applicant invited Examiner for possible language amendment guidance (Paper No. 15, p. 7, 1st paragraph). In response, Examiner respectfully offers the following suggestions:

- Simple removal of the term "short" or "brief" from the claim language would broaden the scope of the claim and overcome the standing 112 rejection.

- Claim 18 introduces two kinds of "intervals." The first kind comprises the "short intervals." The second kind comprises the "variable duration time intervals." Applicant could adjust the claim language to define the length of the first kind of "intervals" by relating this length to the length of the second kind of "intervals." The specification appears to imply that the

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first kind of "intervals" is shorter than the second kind of "intervals" (Applicant's specification, p. 5, lines 25-27). Any claim language that captures such a relation would adequately define the length of the first kind of "intervals" and overcome the standing 112 rejection.

Conclusion

8. All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David S. Kim whose telephone number is 571-272-3033. The examiner can normally be reached on Mon.-Fri. 9 AM to 5 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571-272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DSK



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